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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/583,390	06/21/2007	Michael Schorn	601-082	3083
39600 7590 09/27/2011 SOFFER & HAROUN LLP. 317 MADISON AVENUE, SUITE 910 NEW YORK, NY 10017				
EXAMINER				
AUNG, SAN M				
ART UNIT		PAPER NUMBER		
3657				
MAIL DATE		DELIVERY MODE		
09/27/2011		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/583,390

Applicant(s)

SCHORN ET AL.

Examiner

SAN AUNG

Art Unit

3657

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 August 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
- 4) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 5) ☒ Claim(s) 1-7, 9-27 and 29-44 is/are pending in the application.
- 5a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 6) ☒ Claim(s) 1-7, 9-11 and 44 is/are allowed.
- 7) ☒ Claim(s) 12-27, 29-43 is/are rejected.
- 8) ☐ Claim(s) ____ is/are objected to.
- 9) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 10) ☐ The specification is objected to by the Examiner.
- 11) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 12) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-806)
Paper No(s) Mail Date ____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s) Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

This communication is a Third Office Action Non-Final rejection on the merits. Claims 1-43, as originally filed, are currently pending and have been considered below.

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on August 16, 2011 has been entered.

Response to Amendment

The amendment filed August 16, 2011 has been entered. Claim 1 has been amended, claims 8 and 28 have been cancelled and new claim 44 has been added. Therefore, claims 1-7, 9-27, 29-44 are now pending in the application.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. **Claims 12-14, 20-21 and 26** are rejected under 35 U.S.C. 102(b) as being anticipated by Bieker D. et al. (DE-3530598).

As per claim 12, Bieker discloses a caliper for a disc brake comprising thrust means for clamping at least two brake pads (Figures 2 and 4) with friction against a braking band of a brake disc, wherein said caliper comprises at least two seats (Figures 2 and 4) receiving said brake pads, each of said seats comprising:

a central space bounded by a connecting member (9, Figures 2 and 4) which connects the two lateral walls of the caliper and a lower edge of the lateral wall opposed to the aforesaid connecting member, and also, laterally, by two containment walls (Figures 2 and 4);

two outer spaces (15) which extend laterally from the central space, there being arranged in each of said outer spaces a pin (25) capable of engaging a respective eye of said brake pad (Figures 1-4),

wherein both the connecting member and the lower edge extend along circumferences of a circle, imparting an arcuate shape to the central space so that an upper edge of said connecting member is substantially convex and said lower edge is substantially concave (Attached figure and figure 1), and said outer spaces are disposed substantially at the height of said lower edge of the caliper (Attached figure and figure 1).

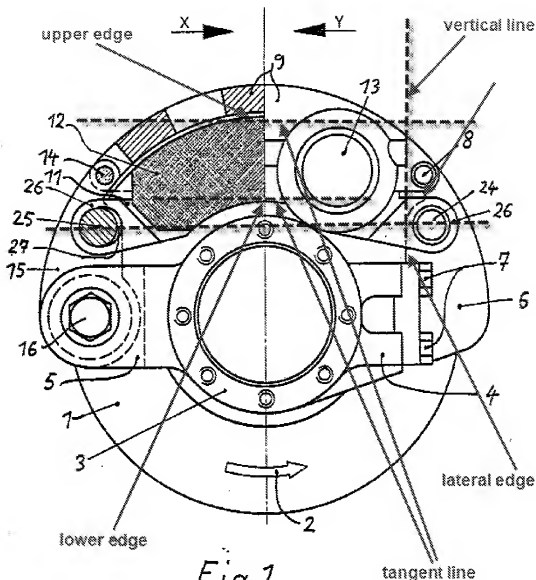
As per claim 13, Bieker discloses said seat formed by the arcuate central space together with the outer spaces has a substantially "9" shape (Figure 1).

As per claim 14, Bieker discloses the seats at the lower edge are open towards the outside of the caliper and devoid of opposing or bearing surfaces which may prevent displacement of the brake pad (Figure 1).

As per claim 20, Bieker discloses said pins are obtained separately from the caliper and then connected thereto (Bieker discloses pin is bolt 24, Paragraph 3 of specification).

As per claim 21, Bieker discloses the longitudinal axes of the two pins of each seat lie approximately in a plane tangent to the lower edge of the respective lateral wall at a point halfway between the two containment walls (Attached figure and figure 1).

Claim 26 recites the genus of the same limitation of **claim 12** and is therefore rejected under same rationale.



Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 15-19, 22-25** are rejected under 35 U.S.C. 103(a) as being unpatentable over Bieker D. et al. (DE-3530598) as applied to claim 12 above, and further in view of Fujimori et al. (US Patent 4,214,649).

As per claim 15, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose said containment walls constitutes a seat for a brake pad spring element and has an upper surface facing radially outwards with respect to the axis of rotation of the brake disc and inclined towards the inside of the central space.

Fujimori discloses Antirattle Spring for a Disc Brake of Vehicle comprising; said containment walls constitutes a seat for a brake pad spring element and has an upper surface facing radially outwards with respect to the axis of rotation of the brake disc (Figures 1 and 3) but fails disclose that the upper surface inclined towards the inside of the central space.

Biker as modified by Fujimori discloses the claimed invention except for the upper surface inclined toward the inside of the central space. It would have been obvious to one ordinary skill in the art at the time the invention was made to the upper surface inclined toward the inside of the central space, since it has been held that where the general condition of a claim are disclosed in the prior art, discovering the optimum or workable range involves only routine skill in the art. In re Aller, 105 USPQ 233.

As per claim 16, Biker discloses all the structural elements of the claimed invention but fails to explicitly disclose the upper surfaces are substantially flat and lie in

planes which intersect the lower edge at a point halfway between the two containment walls.

Fujimori discloses the upper surfaces (11) are substantially flat and lie in planes which intersect the lower edge (Attached figure) at a point halfway between the two containment Walls (Attached figure and figure 1).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad of the Bieker to make the upper surfaces are substantially flat and lie in planes which intersect the lower edge at a point halfway between the two containment walls as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 17, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose each of said containment walls has a lower surface disposed on the side of the containment walls opposed to the upper surfaces and facing in the same direction as the lower edge of the lateral wall.

Fujimori discloses each of said containment walls (11) has a lower surface disposed on the side of the containment walls opposed to the upper surfaces (Attached figure) and facing in the same direction as the lower edge of the lateral wall (Attached figure and figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad of the Bieker to make the containment walls has a lower surface disposed on the side of the containment walls opposed to the

upper surfaces and facing in the same direction as the lower edge of the lateral wall as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 18, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose the lower surfaces are substantially flat and extend in a direction parallel to the directions tangential to the connecting member and to the lower edge at a point halfway between the containment walls.

Fujimori discloses the lower surfaces (Attached figure) are substantially flat and extend in a direction parallel to the directions tangential to the connecting member and to the lower edge at a point halfway between the containment walls (Attached figure and figure 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad of the Bieker to make the lower surfaces are substantially flat and extend in a direction parallel to the directions tangential to the connecting member and to the lower edge at a point halfway between the containment walls as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 19, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose said lower surfaces of the containment walls bound at the top said outer spaces containing the pins.

Fujimori discloses said lower surfaces (Attached figure) of the containment walls (11) bound at the top said outer spaces containing the pins (13C, Figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad of the Bieker to make the said lower surfaces of the containment walls bound at the top said outer spaces containing the pins as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 22, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose from said upper surfaces of the containment walls a stop tooth protrudes which are capable of engaging a suitable recess of the brake pad spring element to secure the latter on the containment wall.

Fujimori discloses from said upper surfaces (Attached figure) of the containment walls (11) a stop tooth (12) protrudes which are capable of engaging a suitable recess of the brake pad spring element to secure the latter on the containment wall (Attached figure and figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad assembly of the Bieker to make the upper surfaces of the containment walls a stop tooth protrudes which are capable of engaging a suitable recess of the brake pad spring element to secure the latter on the containment wall as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 23, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose said stop tooth is spaced from the surface of the

seat so as to delimit between the latter and the stop tooth a passage for the brake pad spring element.

Fujimori discloses said stop tooth (12) is spaced from the surface of the seat (11 a) so as to delimit between the latter and the stop tooth (12) a passage for the brake pad spring element (Attached figure and figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the brake pad assembly of the Bieker to make the stop tooth is spaced from the surface of the seat so as to delimit between the latter and the stop tooth a passage for the brake pad spring element as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

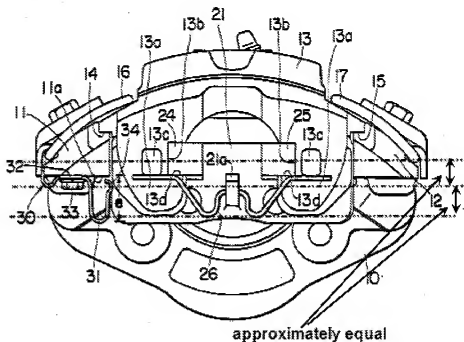
As per claim 24, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose each of the lower surfaces of the containment walls has a recess capable of receiving a protuberance of said brake pad spring element.

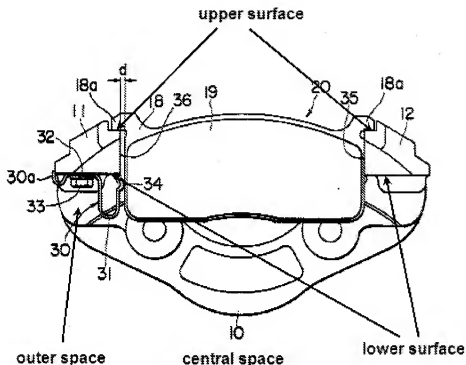
Fujimori discloses each of the lower surfaces (Attached figure) of the containment walls has a recess capable of receiving a protuberance of said brake pad spring element (Fujimori showed in figures 1-3, the spring element (30) is attached to the lower surface with screw 33, inherently conclude that lower surface of the containment walls has a recess to receive the bolt 33).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker to make the lower

surfaces of the containment walls has a recess capable of receiving a protuberance of said brake pad spring element as taught by Fujimori in order to provide in design for bearing against an indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 25, Bieker discloses said caliper is a fixed caliper (Figures 1-4).





6. **Claims 27, 29-43** are rejected under 35 U.S.C. 103(a) as being unpatentable over Biker D. et al. (DE-3530598) as applied to claim 26 above, and further in view of Moriya (US Patent 4,245,723), Fujimori et al. (US Patent 4,214,649), Melinat (US Patent 4,373,615), and Souma (US Patent 4,181,200).

As per claim 27, Bieker discloses all the structural elements of the claimed invention but fails to explicitly disclose the chamfering radius of the eyes is less than the radius of the cylindrical pins so that the mutual bearing between the pin and the chamfered corner of the eye occurs at two points of contact.

Melinat discloses Laminated Disc Brake Pad Assembly comprising;

the chamfering radius of the eyes (40, 42) is less than the radius of the cylindrical pins so that the mutual bearing between the pin (Figure 2) and the chamfered corner of the eye occurs at two points of contact (Figure 2).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker to include the chamfering radius of the eyes is less than the radius of the cylindrical pins so that the mutual bearing between the pin and the chamfered corner of the eye occurs at two points of contact as taught by Melinat in order to provide an additional force to press the brake pad assembly in a rotating direction of the disc.

As per claim 29, Bieker as modified by Melinat discloses all the structural elements of the claimed invention but fails to explicitly disclose equipped with one or more brake pad spring elements, wherein each of said spring elements comprises, an elongate plate of resilient material, which plate is bent so as to form a "C"-shaped base, preferably rectangular or trapezoidal, or alternatively arcuate, said base being capable of tightening resiliently about said containment wall of the caliper.

Fujimori discloses equipped with one or more brake pad spring elements, wherein each of said spring elements comprises, an elongate plate of resilient material, which plate is bent so as to form a "C"-shaped base, preferably rectangular or trapezoidal, or alternatively arcuate, said base being capable of tightening resiliently about said containment wall of the caliper (Figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by

Melinat to include the one or more brake pad spring elements, wherein each of said spring elements comprises, an elongate plate of resilient material, which plate is bent so as to form a "C"-shaped base, preferably rectangular or trapezoidal, or alternatively arcuate, said base being capable of tightening resiliently about said containment wall of the caliper as taught by Fujimori in order to provide in design for bearing against an Indefinite number of cycles of deformation caused by the reciprocation of the pad assembly.

As per claim 30, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the base of the brake pad spring element is in the shape of a trapezium open along the major base and shaped so as to be substantially complementary to the shape of the containment wall.

Souma discloses Anti-Rattle and Positioning Member for Disc Brake comprising; the base (15) of the brake pad spring element is in the shape of a trapezium open along the major base (Figure 3) and shaped so as to be substantially complementary to the shape of the containment wall (Figure 1).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to include the brake pad spring element is in the shape of a trapezium open along the major base and shaped so as to be substantially complementary to the shape of the containment wall as taught by Souma in order to

provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 31, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that upper section of said base has a recess capable of receiving a tooth formed on the containment wall of the caliper.

Souma discloses upper section of said base has a recess (15a, 15b) capable of receiving a tooth formed on the containment wall of the caliper.

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the upper section of said base has a recess capable of receiving a tooth formed on the containment wall of the caliper as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 32, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that said recess is formed by a notch transverse to the length of the plate which involves only a part of the width of the plate so that a bridge remains which ensures the structural continuity of the spring element in the region of the recess.

Souma discloses said recess (15a, 15b) is formed by a notch transverse to the length of the plate (Figure 3) which involves only a part of the width of the plate so that a

bridge (15c) remains which ensures the structural continuity of the spring element in the region of the recess (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the recess is formed by a notch transverse to the length of the plate which involves only a part of the width of the plate so that a bridge remains which ensures the structural continuity of the spring element in the region of the recess as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 33, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the two opposed sides of the recess two limbs are formed which are bent back so as to constitute opposing walls capable of bearing from two opposed sides against said tooth of the caliper, while the bridge can be positioned in a space between the tooth and the lateral wall of the caliper.

Souma discloses the two opposed sides of the recess (15a, 15b) two limbs are formed which are bent back so as to constitute opposing walls (Figure 3) capable of bearing from two opposed sides against said tooth of the caliper, while the bridge can be positioned in a space between the tooth and the lateral wall of the caliper (Figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by

Melinat and Fujimori to make the two opposed sides of the recess two limbs are formed which are bent back so as to constitute opposing walls capable of bearing from two opposed sides against said tooth of the caliper, while the bridge can be positioned in a space between the tooth and the lateral wall of the caliper as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 34, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that a lower section of said base has a protuberance capable of engaging a recess provided in the containment wall of the caliper.

Souma discloses a lower section of said base (Figure 3) has a protuberance (15b) capable of engaging a recess provided in the containment wall of the caliper (Figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the lower section of said base has a protuberance capable of engaging a recess provided in the containment wall of the caliper as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 35, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the

protuberance of the spring element has been obtained by means of local deformation of the plate, for example by means of punching or shearing and bending.

Souma discloses the protuberance of the spring element has been obtained by means of local deformation of the plate (Figure 3), for example by means of punching or shearing and bending (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the protuberance of the spring element has been obtained by means of local deformation of the plate, for example by means of punching or shearing and bending as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 36, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the protuberance is formed by a limb of the spring element bent back towards the inside of the base.

Souma discloses the protuberance is formed by a limb of the spring element bent back towards the inside of the base (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the a limb of the spring element bent back towards the

inside of the base as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 37, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that from the upper side and lower side of the base of the spring element 3 there extend respective pressure sections, upper and lower, capable of biasing the brake pad resiliently so as to hold it in its position in the seat.

Souma discloses from the upper side and lower side of the base of the spring element (15) there extend respective pressure sections, upper and lower (Figure 3), capable of biasing the brake pad resiliently so as to hold it in its position in the seat (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the upper side and lower side of the base of the spring element 3 there extend respective pressure sections, upper and lower, capable of biasing the brake pad resiliently so as to hold it in its position in the seat as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 38, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the tipper pressure section and lower pressure section are bent back with respect to the adjacent

upper side and lower side of the base and extend in a direction substantially opposed to these latter.

Souma discloses the tipper pressure section (15e) and lower pressure section (15d) are bent back with respect to the adjacent upper side and lower side of the base and extend in a direction substantially opposed to these latter (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the tipper pressure section and lower pressure section is bent back with respect to the adjacent upper side and lower side of the base and extend in a direction substantially opposed to these latter as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 39, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the upper pressure section and lower pressure section are oriented towards the closed side of the base.

Souma discloses the upper pressure section (15e) and lower pressure section (15d) are oriented towards the closed side of the base (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the upper pressure section and lower pressure section are

oriented towards the closed side of the base as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 40, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that each pressure section of the spring element forms together with the adjacent lateral section of the base a resilient arc, the elastic deformation of which is capable of forming, with the spring element mounted, a resilient bias acting on the brake pad.

Souma discloses each pressure section of the spring element (15e, 15d) forms together with the adjacent lateral section (15c) of the base a resilient arc (Figure 3), the elastic deformation of which is capable of forming, with the spring element mounted, a resilient bias acting on the brake pad (Figures 1 and 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the each pressure section of the spring element forms together with the adjacent lateral section of the base a resilient arc, the elastic deformation of which is capable of forming, with the spring element mounted, a resilient bias acting on the brake pad as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 41, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the brake

pad spring element has an overall shape similar to the letter "z" (lower case Greek letter zeta) or to its mirror image.

Souma discloses the brake pad spring element has an overall shape similar to the letter "z" (lower case Greek letter zeta) or to its mirror image (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the brake pad spring element has an overall shape similar to the letter "z" (lower case Greek letter zeta) or to its mirror image as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 42, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that the brake pad spring element has an overall shape similar to the letter "Ω" (upper case Greek letter Sigma) or to its mirror image.

Souma discloses the brake pad spring element has an overall shape similar to the letter "Ω" (upper case Greek letter Sigma) or to its mirror image (Figure 3).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the brake pad spring element has an overall shape similar to the letter "Ω" (upper case Greek letter Sigma) or to its mirror image as taught by Souma in order to provide a disc brake, where in a pad can be properly position in relation to a pad retaining member or stationary member.

As per claim 43, Bieker as modified by Melinat and Fujimori discloses all the structural elements of the claimed invention but fails to explicitly disclose that each seat of the caliper has associated with it two brake pad spring elements which have a structure and shape which is chiral, that is to say, mirror-image but not superimposable.

Moriya discloses each seat of the caliper has associated with it two brake pad spring elements (30) which have a structure and shape which is chiral, that is to say, mirror-image but not superimposable (Figures 1 and 2).

It would have been obvious to one ordinary skill in the art at the time the invention was made to modify the disc brake assembly of the Bieker as modified by Melinat and Fujimori to make the each seat of the caliper has associated with it two brake pad spring elements which have a structure and shape which is chiral, that is to say, mirror-image but not superimposable as taught by Moriya in order to provide an additional force to press the brake pad assembly in a rotation of the disc.

Allowable Subject Matter

7. Claims 1-11 and 44 are allowed.

The closest prior art Biker D. et al. (DE-3530598) fails to explicitly disclose that a plate with a central portion provided with a layer of friction material, said central portion having an upper edge and an opposed arcuate lower edge and also two lateral edges, said lower arcuate edge having a tangent point; two support appendages which extend from said lateral edges of the central portion, each of said support appendages bounding an eye capable of receiving a pin of the caliper, said eyes disposed substantially on a tangent line to a lower arcuate edge at the tangent point halfway

between said lateral edges such that the tangent line intersects both pins (for claim 1) and two support appendages which extend from said lateral edges of the central portion, each of said support appendages bounding an eye capable of receiving a pin of the caliper, the radius of said eye being less than the radius of said pin so that the mutual bearing between said pin and said eye occurs at two points of contact (claim 44).

Response to Arguments

8. Applicant's arguments with respect to claim 1 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to SAN AUNG whose telephone number is (571)270-5792. The examiner can normally be reached on Mon-to- Fri 7:30 am- to 5:00 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Siconolfi can be reached on 571-272-7124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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